FINAL REPORT

AN INITIAL ASSESSMENT OF BURLINGTON ELECTRIC DEPARTMENT'S CORE PROGRAM IMPLEMENTATION

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TABLE OF CONTENTS

1. Executive Summary 1
Introduction 1
Overview of Methodology 1
Summary of Findings and Recommendations 2

2. Core Program Descriptions 9
Individual Core Program Descriptions and Key BED Highlights 11
C&I Market Opportunities Program 11
Commercial and Industrial New Construction Program 13
Residential New Construction Program 16
Efficient Products Program 19
Low-Income Multifamily Residential Energy Efficiency Program (REEP) 21
Low-Income Single Family Program 24

3. Results from Telephone Interviews 27
Introduction 27
Do the Core Programs have the same look and feel? 27
Coordination between EVT and BED concerning implementation of the Core Programs 28
Coordination activities with Vermont Gas Systems 30
Core Program Best Practices 31
Synergistic Improvements 32

4. Appendix A - BED Core Program Implementation Performance Indicators 1

5. Appendix B – Telephone Interview Guide *(attached as separate document)* 1

6. Appendix C – Core Program Summary Table *(attached as separate document)* 1

1. Executive Summary

Introduction

This report describes the methodologies employed and the results of the Initial Assessment of Burlington Electric Department's (BED) Core Programs. GDS Associates, Inc. was contracted by the Vermont Department of Public Service (DPS) to conduct a third party independent assessment of BED's core program implementation in an effort to assess the BED's administrative functions and coordination activities with Efficiency Vermont's (EVT) implementation. Specifically, the purpose of this assessment was to:

- Review coordination / administrative functions with EVT including assessment of the existing financing arrangements and make recommendations for improvement;
- Address criteria set forth in the Vermont Public Service Board Order approving BED's core program implementation;
- Assess progress related to performance indicators in BED's approved program plan;
- Assess coordination with Vermont Gas Systems' programs; and,
- Identify best practices and make recommendations.

By order of the Public Service Board on September 22, 2000, BED began offering the statewide "Core" programs within their service territory in coordination with the newly created Vermont Energy Efficiency Utility, administered by EVT.

Overview of Methodology

The overall goal of the Initial Assessment was to evaluate BED's administrative functions and their coordination with EVT's implementation efforts and offer recommendations and observations that may be used to improve the current arrangement. This assessment included secondary research of BED and EVT documents and staff telephone interviews.

Secondary Research: The purpose of the secondary research was to develop a basis for understanding the underlying program theory and flow, goals and objectives, and the scope of services of each Core Program as originally designed. The documents reviewed included: Vermont DPS Statewide Energy Efficiency Plan (1997); Vermont Public Service Board Order Approving BED's Implementation of the Core Programs and related Dockets, letters, and memos (1999 & 2000); BED's 2000 and 2001 Annual Reports on DSM Program Implementation (2001 & 2002); EVT's 2001 Annual Report (2002); and, efficiency program related material on the web sites of BED, EVT and Vermont Gas Systems (VGS).

Telephone Interviews: A total of ten telephone interviews were conducted with BED staff members (4), EVT staff members (4), and VGS staff members (2). A single interview guide, consisting of twenty-one questions, was used for all interviews and is included as Appendix B. In the case of VGS staff, only questions relevant to their coordination with BED and/or EVT were asked. Length of interviews ranged from forty minutes to one-and-a-half hours per interviewee, depending on the scope of programs for which they are responsible. Based on the previously stated list of key components of this assessment and the criteria defined in the Board Order, five researchable areas were identified and assessed with each interviewee as follows:

- Do the BED and EVT Core Programs have the same "look and feel"?
- Is there adequate coordination between EVT and BED concerning implementation of the Core Programs?
- Are there coordination activities with Vermont Gas Systems?
- What are the Core Program's Best Practices?
- Are there improvements in the programs due to synergies between BED and EVT?

Summary of Findings and Recommendations

This section synthesizes and summarizes the salient information collected as part of the Initial Assessment. For reporting purposes, the five researchable areas that were addressed in the interviews are presented within the context of the five key components of this assessment as stated in the Introduction section.

Overall Findings: Based on a review of the documents previously identified and the interviews conducted with BED, EVT and VGS staff, it appears that BED is delivering the Core Program's in a manner consistent with EVT. Moreover, as illustrated in the costs and savings associated with BED's 2000 and 2001 Core Programs, BED does not appear to be experiencing any significant increased administrative burden or reduced program benefit as a result of delivering the programs only within its service territory. On the contrary, the findings indicate that with essentially the same proportion of administrative costs, BED is delivering the Core Programs as intended in DPS' Statewide Energy Efficiency Plan with a high level of coordination with VGS.

Recommendations: Due to the positive findings and the fact that the Core Programs are still relatively new, there are no significant recommendations to make at this time. However, concerning the ongoing implementation of the programs, it is recommended that BED and EVT schedule quarterly meetings to review the status of each Core Program. Given the proximity of the two organizations, the length of the meetings could be dictated by the agenda and in order to ensure that ideas flow in both directions, each group could alternate in presenting brief project case studies.

Coordination / Administrative functions with EVT: Overall coordination with EVT on the Core Programs appears to be adequate and there were no instances identified where problems were occurring due to a misinterpretation of the program elements or a general lack of communication. One indicator of the level of coordination between the two organizations is the essentially identical definition of the key components of each Core program as part of the interview process. The interviewees were read a description for each program element and asked to agree or amend and overall the slight revisions were comparable from both groups.

The nature of the communications between BED and EVT varies by program but was noted to be primarily related to program policy matters, such as changing incentive levels or new eligible measures. In addition, there is limited interaction on project-specific matters on the C&I and REEP programs. Program managers reported that the frequency of communications between EVT and BED typically occurs at least monthly. Although regularly scheduled meetings between

the program staff at BED and EVT are not scheduled, representatives from both organizations noted that quarterly meetings might be beneficial.

From the information reviewed in the Annual Reports and gathered in the interviews, it appears that the delivery of Core Programs by both BED and EVT has steadily improved over the past two years. Moreover, indications are that each organization has benefited from the other. BED has gained by joining the statewide marketing and outreach campaigns in programs such as Vermont ENERGY STAR® Homes and Energy Efficient Products. In addition, BED has gained access to EVT's prescriptive program incentives for Market Opportunities and Commercial and Industrial New Construction as well as the various modeling tools that EVT has developed or obtained. EVT has gained by having open access to BED's wealth of experience in delivering energy efficiency programs in Vermont. Specifically, BED has accelerated the adoption of commissioning incentives in commercial and industrial projects and paved the way for incorporating green building design (e.g., LEEDS certification) into new construction projects. In addition, the adoption of the 2000 Burlington Energy Guidelines has been identified as improving the relationships with building designers by sensitizing them to energy efficient practices and advancing the adoption of 2001 Vermont Guidelines for Energy Efficient Construction.

Concerning the proportion of administrative cost to overall program cost, although there are a few programs that require attention, there does not appear to be any significant difference between BED and EVT. Table 1 illustrates the percentage of the combined 2000 and 2001 program costs that administration represents. As reflected in Table 1, BED's costs for administration of the Core Programs as a whole are consistent with the administrative costs experienced by EVT.

Table 1. Administrative Costs as Percent of Total Budget (2000 & 2001)[1]

Core Programs	BED	EVT	Difference
Market Opportunities (MOP)	48%	45%	3%
C&I New Construction (CINC)	16%	47%	-31%
Residential New Construction (RNC)	64%	48%	16%
Efficiency Products Program (EPP)	36%	32%	5%
Low Income REEP	37%	42%	-5%
Low Income Single Family (LISF)	61%	30%	31%
Total Core Programs	**41%**	**40%**	**1%**
Core Program Administrative Cost	**$333,937**	**$4,708,505**	**$4,374,568**
Total Core Program Costs	**$822,959**	**$11,781,883**	**$10,948,913**

Values based upon individual program data found within the BED and EVT 2001 Annual Reports.

[1] Administrative costs are defined by BED in their 2001 Annual Report as including the following: program design and planning, program screening, marketing and outreach, general management, budgeting, financial management and legal costs associated with program implementation, business development, customer service, data management, and IT development and maintenance costs. EVT includes three subcategories within their administrative costs: implementation, program planning, and marketing.

At 64% and 61%, BED's administrative costs for the Residential New Construction program and the Low Income Single Family program consume a majority of the total budget for each program respectively. As noted in the BED's 2001 Annual Report, the Residential New Construction program has incurred administrative time and expenses associated with construction projects that will not be completed or receive a final inspection until the 2002 program year. Therefore, the administrative portion of the program expenses is somewhat inflated in comparison with the total program expenses. This lag is likely to balance out after the program has been in the field for a few years. BED also notes that it has limited projects to spread its portion of the statewide budget for program marketing. Residential new construction is traditionally a difficult market and typically involves high administrative costs. BED noted that the all-or-nothing approach of the Vermont ENERGY STAR® Homes Program, as opposed to offering prescriptive options, might decrease participation but that they understood why it was done. They further noted that EVT gave BED numerous opportunities to comment on the design and that BED is cautiously optimistic that the redesign will create greater Statewide savings in the long-run and transform the Statewide market more quickly.

Concerning the Low Income Single Family program, the trend of lessening administration costs over the past two years suggests that the program is being run more efficiently. It was also noted in the interviews that there is some concern about the rising management costs being passed on by the WAP agencies.

Another significant variation between the administrative costs of the two organizations occurs in the C&I New Construction Program. Only 16% of BED's budget for C&I New Construction is attributable to program administration, as compared to 47% for EVT. As noted in the BED Annual Report, the C&I New Construction program is administratively coordinated with other city departments, and is therefore positioned to minimize the administrative expenses by being involved in a relatively streamlined development review early in the process. In this case, BED benefits from its close proximity to large commercial projects within its relatively small service territory. It was also noted in the interviews that some of the low administrative cost for this program may be due to some general administrative functions being covered by other programs.

The Emerging Markets program was not included in BED's Core Programs but has recently been redesignated to include retrofit projects in both C&I and residential sectors. Per information obtained during the interviews, it appears that for residential projects, Emerging Markets is primarily focused on electric-to-gas heating conversions. However, for C&I projects, Emerging Markets apparently encompasses cost-effective retrofit projects. Prior to the redesign, retrofit projects were addressed under BED's existing non-core energy efficiency programs, independent of EVT's efforts. The current arrangement for the Emerging Markets program requires BED to use the statewide, EVT-developed, screening tool to determine the cost effectiveness of each retrofit project. If the project passes the screening, BED completes the project and invoices EVT for the associated costs. EVT then includes the related costs and savings under their Emerging Markets program. This arrangement is different than other Core Programs as it features BED acting as an Emerging Markets contractor to EVT. If the current Emerging Markets program design continues, it will encompass a number of the BED C&I projects that previously fell under the pre-EVT Energy Advantage and Top 10 programs. As shown in Table 2, the retrofit market is nearly half of the entire C&I budget.

Table 2. BED Retrofit vs. Lost Opportunity/New Construction Program Costs[2]

Program	2000 & 2001	% of Total
C&I Retrofit (EA and Top 10)	$336,395	46%
C&I Market Opportunity (MOP)	$266,249	36%
C&I New Construction (CINC)	$136,640	18%
Total C&I Programs	**$739,284**	**100%**

Performance Indicator Progress: As set forth in the Board Order approving BED's implementation of the Core Programs within its service territory, BED and the Department of Public Service developed and agreed upon twenty indicators for BED performance. These indicators were intended to be viewed in combination with MWh savings and cost per annualized MWh values. Table 3 includes a summary of the status of the twenty indicators. While the values in Table 3 offer a snapshot of the performance indicators' status, it is important to note that in some cases this represents GDS' interpretation of the data available to date and should only be used as a general reference. A full listing of the indicators and a description of their current status is included in Appendix A.

Table 3. Summary of Performance Indicator's Status[3]

Status of Indicator	Count	% of Total
Complete	9	45%
Partial Completion / In Progress	5	25%
Incomplete/Completion Not Anticipated	4	20%
Unable to determine status	2	10%

Full list of indicators is included in Appendix A.

Overall, it appears that BED is on track to meet the goals of the majority of the performance indicators by the end of 2002. The only area of concern, representing three of the four ratings of "Incomplete/Completion Not Anticipated", is the goal set forth for fuel-switching space heat and water heating systems under the REEP and LISF programs. Although BED has communicated that they have employed an aggressive approach to converting electric space heat and water heating for the past ten years, the indicators identify an estimate of the existing population of electric space heat and water heating. It appears that the estimated populations should be reviewed for accuracy in conjunction with BED examining their approach for addressing this measure.

The two instances where GDS was unable to determine the status of the indicators related to indicators where the progress goal was an increase in the percentage of program participation. From the data reviewed, neither the base nor the current percentage of participation was clear.

[2] BED Evaluation costs were not included in the program totals.

[3] GDS developed the three levels of status for the indicators. The "Incomplete/Completion Not Anticipated" level includes indicators that do not appear likely to be met by the end of 2002.

Criteria set forth in the Board Order: In determining whether BED should continue to deliver the Core Programs, the Vermont Public Service Board noted consideration of several criteria. Each of the specific criteria identified in the Board Order is addressed below.

- Commitment and capability of BED to implement programs – Indications from the level of each program's success as highlighted in Table 4 and from the interviews completed are that BED is committed and capable of implementing the core energy efficiency programs in coordination with EVT. An interviewee noted that, "BED's commitment to energy efficiency, as illustrated through their leadership on LEEDs certifications and commissioning, is reassuring when partnering with them on a project".

- Extent to which BED customers will be afforded Core Program services comparable to other utility customers in the state – Findings from the interviews strongly support that the Core Programs are being delivered by BED in a manner consistent with EVT. Several of the programs, including regional (NEEP) components of MOP and CINC, RNC, EPP, and LISF, are delivered seamlessly by administrative contractors throughout the State. For the programs that are more custom in nature, such as MOP, CINC, and REEP, the consistency of prescriptive options and modeling tools as well as the level of ongoing communication between BED and EVT assist in ensuring that customers receive comparable services statewide.

- Preservation of administrative efficiencies and program benefits of statewide delivery, giving due consideration to the benefits of BED delivery within its service territory – As stated in the discussion of the previous criteria, many of the programs (components of MOP and CINC, RNC, EPP, and LISF) are delivered through the same administrative contractors statewide, in which cases BED is funding a representative portion of the costs. In the remaining programs, the open lines of communication between the organizations allows for technical advancements and other program related information to flow in both directions. Moreover, the existing relationships that BED staff have with entities throughout their service territory, along with the access to other City of Burlington departments, allows for administrative savings in delivering the Core Programs.

- Adequacy of BED's proposed budgets and allocations – As shown in Table 4, BED has varied significantly from their original projected budgets over the first two years of Core Program implementation. However, both BED and EVT have managed to keep the total Core Program savings values ahead of program costs, when looked at as a percentage of targets.[4] In the cases of BED's implementation of CINC and REEP, actual spending has been far less than budgeted while estimated savings is far more than targeted. It would be expected that the budgeted program costs and targeted savings would be more in line with actual values after the programs have been in the field for a few years. It is also important to note the significant difference in the magnitude of costs and savings between the two organizations. Given that EVT's values are in excess of ten times those of BED, it seems

[4] EVT's 2001 Annual Report presents program-to-date costs and savings as a percentage of total 3-year targeted values. Therefore, a comparison of costs and savings as a percentage of to-date targets is not made. For the Core Programs' values shown in Table 4, EVT's costs reflect 57% of the 3-year budget and savings are 75% of the 3-year target. Individual EVT program costs as a percentage of 3-year targets range from a high of 69% for the EPP program to a low of 44% for the LISF program.

that BED is more susceptible to large percentage variations than EVT (*i.e.*, not likely to see EVT exceed targeted values by two or three times).

Table 4. Core Program Costs and Savings as a Percentage of Targets

	Reported Values for 2000 & 2001 Combined			
	BED		EVT*	
Core Program	**Costs** (% of Budget)	**Annualized Savings** (% of Target)	**Costs**	**Annualized Savings**
C&I Market Opportunities Program	$266,249 (123%)	2,169 MWh (186%)	$4,234,275	25,652 MWh
C&I New Construction Program	$136,640 (80%)	1,212 MWh (230%)	Combined with MOP[5]	Combined with MOP[5]
Residential New Construction Program	$85,455 (144%)	40 MWh (103%)	$1,445,443	1,790 MWh
Efficient Products Program	$234,700 (292%)	867 MWh (379%)	$3,626,919	21,944MWh
Low-Income Multifamily Residential Energy Efficiency Program (REEP)	$65,413 (53%)	403 MWh (140%)	$1,572,091	3,980 MWh
Low-Income Single Family Program	$34,502 (26%)	63 MWh (23%)	$893,155	2,201 MWh
Total Core Programs	**$822,959 (105%)**	**4,754 MWh (188%)**	**$11,771,883**	**55,566 MWh**

*EVT values are shown to illustrate the relative magnitude of costs and savings between BED and EVT.

Coordination with Vermont Gas Systems programs: BED coordinates with VGS on projects relating to nearly every Core Program, with the possible exception of the LISF program. On the commercial and industrial programs, the level of coordination is extremely high and includes such partnering as sharing the simulation modeling tasks and collaborating on specific incentives. On the RNC program, VGS worked with EVT and BED on the program redesign and now delivers the same program, Vermont ENERGY STAR® Homes, through the same network of contractors. On the REEP program, similar to the C&I programs, VGS and BED work closely on the large projects and share relevant information and tasks, when appropriate. In addition, VGS and BED collaborate extensively on projects involving the Time of Sale (TOS) Ordinance to encourage property-owners to participate in VGS's weatherization program so that higher quality work is incorporated into the project. While there is no direct link with VGS on the EPP program, VGS includes EPP literature when marketing their programs.

[5] EVT delivers the MOP and CINC programs under the Commercial Energy Opportunities (CEO) Program.

Core Program Best Practices and Synergistic Improvements: Highlights of the interviewee's responses concerning the Core Program's best practices and examples of synergistic improvements are included below.

- Inclusion of commissioning on CINC projects is key due to the frequency of problems with control system programming and calibration
- Increased push on Green Building Design has provided good case studies and has helped raise the bar for other projects
- As a result of having to meet the 2000 Burlington Energy Guidelines, some design firms are now easier to work with on efficiency projects outside of Burlington.
- Coordination of EVT and BED on Building Solutions Conference was excellent
- EVT's prescriptive tool and Technical Reference Manual for the CINC and MOP programs work well
- Coordination with VGS has added to comprehensiveness and allowed for specific expertise to be focused on electrical and thermal measures
- For RNC program, simplicity is key and one-stop is better, EVT delivering single program message is great
- Added value in having an organization like BED involved in the Statewide program efforts by complementing EVT's expertise

2. Core Program Descriptions

There are six Energy Efficiency Utility (EEU) Core Programs that BED implements within its service territory. These Core Programs are:

- Commercial and Industrial Market Opportunities Program
- Commercial and Industrial New Construction Program
- Residential New Construction Program (now entitled Vermont ENERGY STAR® Homes)
- Efficient Products Program
- Low-Income Multifamily Residential Energy Efficiency Program (REEP)
- Low-Income Single Family Program

In addition, BED has recently begun implementation of EVT's newly redesigned Emerging Markets Program. The redesign of the program allows BED to address retrofit opportunities in both the Commercial and Industrial and Residential sectors. Prior to this, retrofit projects were addressed under BED's existing energy efficiency programs, independent of EVT's efforts. The arrangement in place for the Emerging Markets program requires BED to use a statewide, EVT-developed, screening tool to determine the cost effectiveness of each project. If the project passes the screening, BED completes the project and invoices EVT for the associated costs. EVT will then include the related costs and savings under their Emerging Markets program. This arrangement is different than other Core programs and has BED playing the role of an Emerging Markets contractor to EVT.

Table 5 illustrates the key program data for each of these six Core Programs, as well as the newly redesigned Emerging Markets program.

Table 5. Highlights of BED Core Program Implementation

Core Program	BED Implementation Method	Role of EVT	Comments
C&I Market Opportunities Program	As part of the existing Top 10 and EA programs; prescriptive incentives based on EVT's Lighting Form and NEEP's Cool Choice & MotorUp programs.	Incentive updates. Joint training on modeling software.	Effective transition from existing programs. Prescriptive rebates identical to EVT.
C&I New Construction Program	Coordinate with City departments and VGS to develop leads. Use DPS and EVT screening tools.	Incentive updates. Joint training on modeling software.	Burlington Energy Code and commissioning work have been assets to statewide effort.
Residential New Construction Program	Coordinate with City departments and VGS to develop leads. Use Vermont Wise and ERH Vermont.	Program redesign, with BED input. Management of Vermont Wise and ERH Vermont.	Virtually identical program statewide. BED's access to building data is key for addressing leads.
Efficient Products Program	BED contracts with EVT for all components of program. Additional outreach via traditional utility means (bills, customer service).	Management of contractors for marketing, implementation, and retailer outreach.	Virtually identical program statewide. BED supplements effort through ongoing customer contact.
Low-Income Multifamily Residential Energy Efficiency Program (REEP)	Coordinate with City departments and housing organizations to develop leads. Partner with local WAP (CVWS) and VGS.	Frequent coordination in early stages. Technical guidelines and incentive updates. Advisory role.	EVT's design of comprehensive track is excellent. Frequent VGS coordination.
Low-Income Single Family Program	Local WAP (CVWS) is delivery mechanism. Outreach involves BED's existing Heat Exchange database and Vermont's Fuel Assistance database.	Oversight of WAP's statewide to ensure consistent delivery. Payee of lighting, DHW-related and refrigerator incentives.	Consistent delivery statewide and effective coordination between BED and EVT.
Emerging Markets	As part of the existing Top 10, EA and Heat Exchange programs. Includes retrofit projects.	Program redesign. Development of screening tool and advisory role.	BED effectively acts as contractor to EVT. May absorb many of the EA, Top 10, and Heat Exchange projects not captured by MOP

Individual Core Program Descriptions and Key BED Highlights

C&I Market Opportunities Program

Initial Program Design Elements ***(per DPS' Statewide Energy Efficiency Plan, 1997)***
The MOP Program is designed to provide services and incentives to commercial and industrial participants to encourage adoption of efficient equipment, systems and practices concurrently with natural market cycles for equipment replacement and upgrades. The program seeks to minimize lost opportunities and advance market transformation for equipment and systems specified and installed in the C&I sectors through a combination of marketing strategies, technical assistance, commissioning, and financial incentives provided to customers and trade allies.

Key Objectives –

- Capture cost-effective and durable savings comprehensively at time of equipment replacement, overhaul or remodeling
- Achieve substantial participation in all segments of eligible market
- Leverage customer investment
- Achieve market transformation in comprehensiveness and efficiency equipment & system replacements, HVAC, motor sizing and vendor stocking and promotion practices
- Enhance competitive energy services provided by others and advance private/public partnerships to establish improved equipment standards and practices in these markets
- Leverage other regional and national market transformation resources
- Reduce long run total resource cost of energy services to Vermont citizens & business

Eligible markets for MOP include all commercial, industrial, agricultural, governmental, and institutional electricity consumers in Vermont. The program specifically targets those already considering replacement, major overhaul, or remodeling of major energy using systems or equipment. In addition, the program also targets trade allies, including equipment vendors, ESCOs, and design professionals.

MOP offers three participation paths with varying levels of assistance. The prescriptive path offers incentives from 75% to 100% of incremental costs for measures such as lighting, motors and HVAC equipment. The custom path offers incentives of up to 100% of incremental cost. The comprehensive track, which encourages a "systems" approach to equipment and building design, offers bonus incentives or discounted, positive cash flow financing to cover net capital cost of an entire comprehensive measure package, designed to encourage participants to install additional, interacting measures. For all participation paths, no-cost technical assistance services are provided directly to participants, in conjunction with trade allies. Inspections following project completion and no-cost commissioning services are also provided. Participating customers must provide information on proper operation and maintenance procedures for all installed measures.

BED Delivery Components - The services associated with the C&I Market Opportunities Program are delivered under BED's pre-existing Top 10 and Energy Advantage (EA) programs. Both BED programs have been in existence since 1991 and offer both market-driven and retrofit services. The Top 10 program provides services to BED's approximately thirty largest commercial and industrial customers and the Energy Advantage program serves all other

commercial customers. All program related costs and savings are recorded and tracked as market opportunity (MOP) or retrofit. Targeted equipment includes lighting, heating, ventilation, cooling, water heating, refrigeration, motors and drives and industrial process applications. Motors and cooling equipment are specifically targeted through the Northeast Energy Efficiency Partnerships, Inc. (NEEP) Cool Choice and MotorUp initiatives.

The adoption of the C&I Market Opportunities Core Program into BED's commercial programs occurred in early 2000. Previous relationships allowed BED to effectively implement many projects under the MOP services structure. In some cases, customer projects that had been identified months, or even years, before were completed in 2000. The BED Implementation Plan states that the Energy Advantage and Top 10 will remain as separate programs and that retrofit projects (non-MOP) will be identified as those initiated by BED staff, where the customer did not plan to make any system improvements.

The BED Commercial Account Representatives and Commercial Services Engineers market the EA and Top 10 programs directly to BED commercial customers. Projects that fall under the MOP program are tracked separately and offer similar incentives and procedures as those provided by EVT. Prescriptive incentives associated with lighting are based on the lighting incentive form as developed by EVT. Similarly, prescriptive incentives for HVAC equipment and motors are based on the regional program incentive levels. For custom measures, actual incentives vary by project but both BED and EVT reported that the target is 25% of total incremental costs, including labor.

BED / EVT Coordination – BED and EVT report that there is ongoing communication concerning program policy, such as changing incentive levels or new eligible measures. In addition, there are occasions where BED may contact EVT concerning project-specific matters.

EVT's recently redesigned Emerging Markets program targets retrofit C&I projects and has effectively included all of the BED Energy Advantage and Top 10 projects that were not included in the MOP program. Three BED projects were completed in 2001 that fall under the new Emerging Markets program. For 2002, BED will address Emerging Markets projects and bill EVT for the associated costs. EVT will then include the related costs and savings under their Emerging Markets program. This arrangement is different than the MOP program, or any other Core Programs, and has BED playing the role of an Emerging Markets contractor to EVT.

C&I Market Opportunities Program – Progress Summary

Budget Category	Two Year Period (2000 - 2001)	
	Budget	Actual
Administration	-	$127,146
Implementation	-	$70,142
Incentives	-	$68,961
Total	$216,258	$266,249
Program Highlights		
186% of targeted savings at 123% of program budget.		
$122/Annualized MWh saved (EVT costs were $155/ Annualized MWh)		
Diversity of savings in 2001 – 53% lighting, 38% AC, 9% motor systems & other		
Diversity of savings in 2000 – 40% AC, 24% lighting, 32% motor systems		

Source: BED and EVT 2001 Annual Report

Coordination with Vermont Gas Systems Programs

BED and VGS report that they coordinate frequently on larger C&I projects that involve both gas and electric measures. Communication was noted to be frequent, several times per week, and typically specific to particular projects. The interviewees noted that the close relationship of BED and VGS is partly due to BED's efforts over the years to replace resistance electric space and water heating with gas-fired systems.

Coordination involves sharing information regarding incentives prior to presenting to the customer to ensure that measures are not over-incentivized. In addition, BED and VGS will share computer modeling files and related data so that there is no redundancy of efforts. In some cases, they noted that they will trade off on the burden of conducting the computer simulations associated with joint projects. BED noted that an additional benefit of coordinating with VGS is that the added level of expertise concerning gas equipment allows for a more comprehensive approach.

Program Progress Performance Indicators

No specific Performance Standards are associated with MOP, however Indicator #14 relating to active participation in the development of Statewide Commercial Buildings Energy Standards (CBES) implementation applies to MOP as well as CINC. BED met this indicator by securing the adoption of the CBES in Burlington in November 2000.

Commercial and Industrial New Construction Program

Initial Program Design Elements ***(per DPS' Statewide Energy Efficiency Plan, 1997)***

The Commercial and Industrial New Construction Program (CINC) helps commercial and industrial builders and developers incorporate the most energy efficient products and techniques possible when building or renovating buildings. The Commercial and Industrial New Construction Program (CINC) includes separate marketing approaches, delivery mechanisms and eligible measures for Act 250 and non-Act 250 projects, and for customers with industrial processes.

CINC provides an integrated, full service approach to achieving cost-effective savings in new construction and major renovation markets. The program offers a package of technical assistance, prescriptive and custom financial incentives, and inspections and commissioning services. CINC markets directly to builders, developers, architects, engineers, contractors and equipment vendors. Marketing, education and training are coordinated with development of a statewide commercial new construction energy code.

Key Objectives –

- Capture cost-effective and durable savings comprehensively in all new C&I buildings and major renovation/remodeling for Act 250 and non-Act 250 projects
- Achieve substantial participation in all segments of eligible market
- Prevent lost opportunities in new construction, renovation/remodel markets
- Achieve market transformation, including improved baseline building practices among Act 250 & non-Act 250 developers, builders, design professionals and contractors
- Stimulate greater inclusion of comprehensive efficiency strategies in building and system design by architects, engineers & trade allies
- Increase efficiency levels for equipment and products stocked/promoted by vendors, contractors, equipment installers & other trade allies
- Assist in establishing framework to promote adoption of statewide energy efficiency standards for commercial new construction, renovation/remodeling along with effective implementation and enforcement strategies
- Coordinate with and leverage other regional/national efforts & resources to further advance C&I building practices
- Reduce long run total resource cost of energy services to Vermont citizens & business

All commercial, industrial, agricultural, governmental and institutional developers, owners or builders of new construction and substantial renovation projects in Vermont are eligible for the CINC program. In addition, design professionals, contractors, vendors and equipment installers are also targeted by the CINC program.

BED Delivery Components - The services associated with the CINC program are coordinated with other City of Burlington agencies, including the City Planning Department and the Department of Public Works. BED staff attend monthly Planning and Zoning Department technical review meetings and explains the CINC program to the permit applicant and provides them with program literature. BED then follows up with the customer at a later date. In addition, BED receives monthly Development Case Load reports from the Department of Planning and Zoning that summarizes all major development projects in Burlington. In order to track projects that may have bypassed the permit process, BED also reviews the new electric service and line extension applications. BED reviews Act 250 projects in conjunction with the DPS to ensure compliance with Criteria 9(F).

BED continued implementation of the year 2000 update of the Guidelines for Energy Efficient Construction in the City of Burlington, VT. BED has also been actively involved in the coordination of the development of the 2001 Vermont Commercial Energy Guidelines to ensure that there is one consistent statewide standard.

Since 1997, BED has been exploring the expansion of their new construction program to include going beyond energy efficiency by incorporating holistic building design elements. BED now has several projects where the owners and design teams are planning to meet the Leadership in Energy and Environmental Design (LEED) criteria developed by the U.S. Green Building Council.

In coordination with EVT and Vermont Gas Systems, BED developed a commissioning incentive based on average costs and savings reported in various sources. EVT and Vermont Gas have adopted the standardized commissioning incentive and it is now being implemented by each utility.

BED / EVT Coordination – BED and EVT report that there is ongoing communication concerning program policy, such as changing incentive levels or new eligible measures. In addition, it was noted that there are occasions where BED may contact EVT concerning questions on project-specific matters. EVT noted that the Burlington Energy Code has helped in leading the way for some design professionals. As a result of having the meet the Code, some design firms are now easier to work with on efficiency projects outside of Burlington.

Because BED has had more first-hand experience in working with commissioning as a component of the CINC program, EVT invited the BED Program Manager to conduct an informal seminar on commissioning. When available, BED attends training sessions hosted by EVT concerning such topics as computer modeling and various vendor trainings. Also, BED brought in representatives from the University of Vermont to present specifics on a refrigeration project at the University.

C&I New Construction - Progress Summary

Budget Category	Two Year Period (2000 - 2001)	
	Budget	Actual
Administration	-	$21,639
Implementation	-	$85,238
Incentives	-	$29,763
Total	$171,361	$136,640
Program Highlights		
230% of targeted savings at 80% of the program budget.		
$113/Annualized MWh saved (EVT costs were $180/Annualized MWh)		
Leveraged $294,500 in customer spending in 2000		
Diversity of savings in 2000 – 54% lighting, 30% AC, 16% mix of motor systems, refrigeration, space heating and ventilation.		

Source: BED and EVT 2001 Annual Report

Coordination with Vermont Gas Systems Programs

BED coordinates with VGS on nearly every project. As noted in the BED Annual Report, meetings with customers and design teams are scheduled so that both BED and VGS staff can attend in order to avoid over-incentivizing measures that provide both electricity and natural gas savings.

In addition, BED and VGS share computer modeling files and related data so that there is no redundancy of efforts. For new project, they note that take turns conducting the computer

simulations. BED and VGS jointly incentivize commissioning projects. BED noted that an additional benefit of coordinating with VGS is that the added level of expertise concerning gas equipment allows for a more comprehensive approach.

Program Performance Indicators - CINC

Performance Standard	Target Date	Status	Progress
#10 – Increase participation by 15% of eligible market.	12/02	Baseline is still to be determined with DPS.	◖
#12 – 50% of applicable new construction projects using building commissioning services.	12/02	Development of commissioning procedures and incentives with EVT is underway. One project in 2000 included commissioning with guidance and incentives from BED. BED's goal is for 50% of all significant projects implemented during the 3 program years.	◖
#13 – Four new construction projects using "green" building design services.	12/02	Six potential "green" projects for completion by the end of 2002.	◖
#14 – Continue active participation in CBES implementation and evaluate adoption of CBES as replacement for Burlington Guidelines	12/02	BED worked closely on development of CBES and secured its adoption in Burlington on 11/13/00. BED is now working with DPS and EVT on outreach and training efforts.	●

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Residential New Construction Program

Initial Program Design Elements ***(per DPS' Statewide Energy Efficiency Plan, 1997)***
The purpose of the Residential New Construction program is to increase the energy efficiency of residential new construction in Vermont. Specifically, the program's seeks to meet the following objectives:

Key Objectives –

- Advance market transformation in energy efficient residential new construction
- Raise both the minimum and average level of energy efficiency in residential new construction toward levels that are societally optimal
- Accelerate the introduction and adoption of advanced energy efficient building practices and renewable energy utilization in residential new construction

The program is designed to meet the stated program objectives though a four-pronged approach:

(1) Create consumer demand for advanced energy efficient homes though marketing, financial incentives, performance guarantees, and the establishment of mortgage products that recognize and promote advanced energy efficiency in residential new construction;

(2) Support and encourage increased levels of energy efficiency and quality in building practices by providing training and technical support to home builders, as well as financial incentives, marketing benefits and recognition of homes built to high levels of energy efficiency;
(3) Promote and secure high levels of compliance with minimum standards for residential energy efficiency currently embodied in the recently enacted Residential Building Energy Standards (RBES) legislation; and
(4) Establish an environment which will support market transformation through a wide range of infrastructure and partnership activities, potentially including working with suppliers to introduce new energy efficient products, institutionalizing recognition of the value of energy efficiency in home appraisal and mortgage underwriting, supporting a uniform statewide home energy rating system, and collaborating in regional and national market transformation initiatives.

All new site-built and modular single and multifamily homes built in Vermont will be targeted for participation. In addition, existing single family homes and multifamily dwellings undergoing significant rehabilitation will be eligible for electrical efficiency measures and services. Because there is significant overlap between new home builders and those doing major renovations, it is expected that once the new construction program is up and running, the practices and equipment promoted will become familiar and used by the same builders who do major rehabs and renovations. Therefore the program will initially concentrate on the new home market, where it is generally easier to identify and target builders and owners. In subsequent years, trade ally outreach will also encompass the renovation market.

BED Delivery Components - The services associated with the Residential New Construction (RNC) program are coordinated with other City of Burlington agencies, including the Planning and Zoning Department and the Department of Public Works. BED staff attend monthly Planning and Zoning Department technical review meetings and explains the Residential New Construction program to the permit applicant and provides them with program literature. BED then forwards the project information to Vermont Wise Energy Services (Vermont Wise) so that they can follow up with the customer. In addition, BED receives monthly Development Case Load reports from the Department of Planning and Zoning that tracks progress of all development projects in Burlington. BED sends needed update to Vermont Wise so that they can follow up. In order to track projects that may have bypassed the permit process, BED also reviews the new electric service and line extension applications. Lastly, BED receives referrals from the Burlington Department of Public Works Inspection Division. DPW refers projects to BED to help them ensure compliance with Burlington's energy efficiency construction code and to assess opportunities for exceeding requirements.

BED / EVT Coordination - BED has been offering the RNC-Vermont Star Homes Program since its inception in 1997. The BED 2001 Annual Report states that BED was party to the 2001 program redesign efforts and made all program changes to stay in coordination with EVT and Vermont Gas Systems. BED, EVT and VGS are working together to develop the most cost effective manner to deal with renovation projects that do not fit into the existing program design. The marketing materials that BED uses for the RNC program are identical to those used by EVT and in an effort to minimize confusion, BED is not identified on the material. The delivery of the

services associated with the RNC program is conducted through the same networks by both BED and EVT (*i.e.*, Vermont Wise cultivates initial leads and Energy Rated Homes of Vermont conducts ratings and related inspections). Because of this network, communication regarding program implementation typically takes place between BED and Vermont Wise as opposed to between BED and EVT.

There are no scheduled meetings between BED and EVT although EVT has extended an open invitation to BED staff to attend EVT's monthly program meeting. Prior to each meeting, an email that highlights the agenda is circulated to BED. To date, BED staff has only attended a few of the meetings.

Due to BED's high $/MWh saved values, BED has indicated that they will work closely with EVT's RNC staff to learn of additional operational efficiencies.

Residential New Construction - Progress Summary

Budget Category	Two Year Period (2000 - 2001)	
	Budget	Actual
Administration	-	$54,351
Implementation	-	$22,842
Incentives	-	$8,262
Total	$59,418	$85,455
Program Highlights		
103% of targeted savings at 144% of program budget		
$2,136/Annualized MWh saved (EVT's costs were $807/Annualized MWh)		
Achieved 51% of potential market in 2000 and 29% in 2001		
Diversity of savings in 2000 – 96% installed lighting, 88% installed qualifying mechanical ventilation, 52% installed qualifying refrigerators and 84% participated in the Vermont Gas Systems' New Construction Program.		

Source: BED and EVT 2001 Annual Report

Coordination with Vermont Gas Systems Programs

In 2001, BED was a party to the EVT redesign of the RNC program which merged the existing Vermont Star Homes with Vermont Gas Systems' HomeBase New Construction program into a new service called Vermont ENERGY STAR® Homes. This redesign will make the services and efficiency guidelines uniform throughout Vermont. There is a high level of interaction between BED and VGS on this program as they utilize the same administrative contractor, Vermont Wise, as well as the same rating organization, Energy Rated Homes of Vermont.

Program Performance Indicators - RNC

Performance Standard	Target Date	Status	Progress
#1 – Increase the participation of eligible market by 15% annually in	12/02	BED is still working to establish a baseline with the DPS. For 2000, BED achieved 51% participation and in 2001 they achieved 29%. There are 62 units in the	◖

Burlington. BED proposes using the 1998 Vermont Star Homes data where the target was 50 Burlington housing units.		pipeline for 2002. Currently at 68% of 3-year savings goal and upon establishment of a baseline, BED appears on track to meet this standard.	

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Efficient Products Program

Initial Program Design Elements ***(per DPS' Statewide Energy Efficiency Plan, 1997)***
The purpose of the Efficient Products Program is to transform the markets for high efficiency appliances, lighting products, and other "plug-in" devices. High efficiency products have commonly struggled for market share due to higher incremental cost and lack of familiarity by distributors, retailers and consumers. The program will identify market barriers and develop strategies to overcome them.

Key Objectives –

- Capture cost-effective energy savings from residential and small commercial lighting and from major appliances at the time of initial installation or normal replacement.
- Achieve substantial customer participation, among all segments of the eligible customer and retailer markets.
- Prevent lost opportunities in the market-driven appliance replacement market.
- Educate consumers and trade allies about the benefits of high efficiency products and develop a distinct logo that identifies targeted products.
- Ensure that a portion of retailers stock and promote a wide range of high efficiency lighting products and appliances.
- Achieve market transformation, including higher efficiency levels of appliances stocked and promoted by retailers, greater availability of a wide range of CFL products, and a fundamental shift in the lighting products commonly purchased and used by Vermonters, at minimum cost.
- Continually educate consumers and trade allies about new and emerging lighting and appliance technologies.
- Support regional and national market transformation efforts where they complement Vermont's DSM goals.
- Directly support and coordinate with other core efficiency programs by making high efficiency products readily available to support them.
- Reduce the long-run total resource costs of energy services to Vermont citizens and businesses.
- Coordinate with, and leverage other public, private and non-profit resources to further market transformation and technology advancement.

All Vermont electricity consumers are eligible to participate in this program. The primary market will be the state's 221,000 primary households but small commercial consumers and others purchasing qualifying products through retail channels may also participate. The program will market to distinct product sectors, such as common consumer purchases (light bulb replacements), homebuilders and homebuyers purchasing major appliances, emergency appliance replacements

(refrigerators, room air conditioners, and water heaters), the housing rehabilitation market (for lighting products and appliances).

BED Delivery Components – Through BED's contract with EVT, BED contributes to the cost of general management, marketing and outreach. EVT's contracted field representatives visit every participating retailer at least three times a year and larger stores are visited more often. In some cases, BED staff will check in with Burlington retailers. BED customers can purchase energy efficient products through participating retailers using instant coupons, through a catalog or on the internet.

BED / EVT Coordination - EVT and BED collaborated on the Great Northeast Energy Star Torchiere Turn-in in October 2000. BED operated a turn-in site at their Pine Street headquarters and allowed any Vermont utility customer to drop off halogen floor lamps in exchange for new Energy Star products. BED collected approximately 1,000 torchieres.

A pilot was launched by EVT in 2001 to increase the participation of small commercial customers. Small commercial BED customers were included in the EVT mailing.

The delivery of the services associated with the EPP program is conducted through the same networks by both BED and EVT (*i.e.*, Energy Federation, Inc. processes instant rebates and catalog and on-line sales). Therefore, communication between BED and EVT is primarily concerned with news about special promotions or program design modifications.

There are no scheduled meetings between BED and EVT although EVT has extended an open invitation to BED staff to attend EVT's monthly program meeting. Prior to each meeting, an email that highlights the agenda is circulated to BED. To date, BED staff has only attended a few of the meetings.

Efficient Products Program – Progress Summary

Budget Category	Two Year Period (2000 - 2001)	
	Budget	Actual
Administration	-	$85,666
Implementation	-	$31,294
Incentives	-	$117,749
Total	$80,399	$234,700
Program Highlights		
379% of targeted savings at 292% of the budgeted cost.		
$271/Annualized MWh saved (EVT's costs were $165/Annualized MWh)		
Increased $/MWh costs attributed to EVT's strong efforts in traditionally underserved areas of Vermont but BED states that it will monitor costs and work with EVT to increase efficiency.		

Source: BED and EVT 2001 Annual Report

Coordination with Vermont Gas Systems Programs

Due to the nature of the EEP program, there is little coordination between BED and VGS on the EPP program. However, VGS includes informational material from the EPP program in the delivery of some of their residential programs.

Program Progress Performance Indicators-Efficient Products Program

Performance Standard	Target Date	Status	Progress
#6 – Develop strategies and a plan in year one with City Water Department to develop a joint effort on Tumblewash program.	12/01	BED did not achieve this target. Water Department is not interested in a partnership but BED continues to provide them with energy efficiency program services and will continue discussions.	○
#7 – Increase program participation by 15% each year (this includes all program measures).	12/02	Both 2000 and 2001 program participation was well above projections for both lighting and clothes washers. It is unclear whether or not a baseline was ever set to determine participation increase.	NA

Progress Key: ●=Complete ◐=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Low-Income Multifamily Residential Energy Efficiency Program (REEP)

Initial Program Design Elements ***(per DPS' Statewide Energy Efficiency Plan, 1997)***
The Low-Income Multifamily Residential Energy Efficiency Program (REEP) is one of two distinct components of the Low-Income Core Program. REEP is designed to provide comprehensive energy efficiency services to Vermonters in larger, multi-family low-income rental housing (5 or more units), making more energy affordable and accelerating the acquisition of demand side management (DSM) resource from this sector. The program is designed to identify and secure comprehensive, cost-effective energy savings in multifamily low-income households. Measures will be identified using uniform, statewide technical analysis and screening for cost effectiveness. Measures will address energy use related to lighting, water heating, refrigeration, thermal envelope and replacement or upgrade of space heating and domestic hot water systems. In addition, design assistance will be offered to customers involved with new construction for renovations.

Financial resources to undertake efficiency improvements will combine and leverage incentives, public grants, the Vermont Weatherization Assistance Program (WAP), investment by property owners and loan programs serving low-income housing. REEP is designed to be operated in partnership with the Vermont WAP. A critical part of REEP will be aggressive partnerships with other entities, whereby the core program will work with social service agencies, energy providers, energy efficiency providers, and others to deliver program services. This may include links to the Efficient Products Core Program to enhance the availability of high efficiency refrigerators, lighting products, and other residential efficiency measures. In addition, the multi-family market is considered to be more complex, requiring services to be tailored by type of property ownership (e.g., owner-occupied, private multi-family, public housing authority).

Key Objectives –

- Smooth transition to REEP for larger, multi-family housing complexes providing new technical and financing resources to housing owners and managers to make energy efficiency improvements.
- Create marketing and service-delivery strategies that minimize barriers to program participation, and maximize benefits to low-income households.
- Develop and implement an outreach and marketing plan that targets low-income housing owners/managers and tenants, recognizing the distinct types of housing and ownership unique to low-income housing, (e.g., subsidized housing projects, rental buildings, and single-family residences).
- Develop strategies, in conjunction with the Vermont Office of Economic Opportunity and the Department of Social Welfare, to strengthen linkages and coordination between WAP, LIHEAP fuel assistance, and other low-income assistance programs, recognizing that low-income energy affordability is best attained through an appropriate balance of use reduction (through efficiency) and public financial assistance.

The eligibility criteria for REEP is Vermont households in multi-family buildings of 5 units or more where at least half of the residents are no more than 80% of the median income. This eligibility is broader than the 150% of the Federal poverty threshold of Vermont WAP. These eligibility levels are to be examined and possibly expanded in the future to better serve the energy needs of greater numbers of low-income Vermonters. Original estimates from the 1997 DPS' Statewide Energy Efficiency Plan report that 10,604 or 28% of all low-income households are in multi-family buildings.

BED Delivery Components – BED uses methods similar to those used for the Residential New Construction (RNC) program to identify potential REEP projects. This includes coordinating with other City of Burlington agencies, including the Planning and Zoning Department and the Department of Public Works. BED staff attend monthly Planning and Zoning Department technical review meetings and explains the REEP program to the permit applicant and provides them with program literature. In addition, BED receives monthly Development Case Load reports from the Department of Planning and Zoning that tracks progress of all development projects in Burlington. In order to track projects that may have bypassed the permit process, BED also reviews the new electric service and line extension applications. Lastly, BED receives referrals from the Burlington Department of Public Works Inspection Division. DPW refers projects to BED to help them ensure compliance with Burlington's energy efficiency construction code and to assess opportunities for exceeding requirement.

However, BED notes that the most effective referrals come directly from the housing organizations. In addition, Vermont Gas Systems was also noted as being very helpful in referring potential REEP projects to BED.

BED is also working to incorporate green building practices into REEP projects. To this end, BED is now involved in two projects where Leadership in Energy and Environmental Design (LEED) certification is being investigated.

BED / EVT Coordination - EVT REEP staff provide program materials and guidance to BED on all REEP issues and provide BED with regular updates on program design changes as well as

general collaboration concerning on-going projects. For example, BED attended a workshop in Burlington concerning the newest REEP program feature, the Comprehensive Track for new construction and major rehabilitation projects. As part of the workshop, BED met with area developers, architects, engineers, housing authority representatives, and financiers.

REEP program staff from BED and EVT report that there was frequent interaction when the program was being launched but now there is ongoing communication concerning programmatic modifications or questions that BED may have. In addition, there is some contact at the project level concerning leads for upcoming projects or as a "sounding board" on a specific project.

Low-Income Multifamily REEP – Progress Summary

Budget Category	Two Year Period (2000 - 2001)	
	Budget	Actual
Administration	-	$24,144
Implementation	-	$12,554
Incentives	-	$28,716
Total	$124,346	$65,414
Program Highlights		
140% of targeted savings at 53% of program budget		
$163/Annualized MWh saved (EVT's costs were $395 /Annualized MWh)		

Source: BED and EVT 2001 Annual Report

Coordination with Vermont Gas Systems Programs

BED reports that they continue to strengthen the REEP partnership with VGS and Champlain Valley Weatherization Service (CVWS). Program staff at both BED and VGS stated that they coordinate with each other on almost every project. The overall level of coordination on projects is very high, including the sharing of project modeling data.

Program Performance Indicators - Low-Income Multifamily REEP

Performance Standard	Target Date	Status	Progress
#11 – Increase participation by 15% annually of eligible market w/completed projects. BED proposes that the baseline be based on 8 projects per year.	12/01	For 2001, this target was exceeded with 195 units completed. Two new housing projects completed in 2001 were developed by Housing Vermont.	●
#15 – Fuel Switch 30 of the estimated remaining 80 total electrically heated low-income units. (80 is the total estimated population for LISF and REEP).	12/02	No available fuel switching opportunities in either 2000 or 2001, all projects included buildings that were heated with natural gas. It does not appear that this goal will be reached by 12/02. Source of the 80 estimated units with electric heat should be revisited.	○
#16 – Fuel-switch 45 electric domestic hot water tanks (approx. 25% of the total	12/02	No available fuel switching opportunities in either 2000 or 2001, most units were heated with natural gas or fuel switching was not technically possible.	○

estimated low-income sector). This is in addition to the 40 for LISF.		It does not appear that this goal will be reached by 12/02. The lack of fuel switching opportunities may be due to BED's aggressive removal of electric space and water heating over the past ten years.	

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Low-Income Single Family Program

Initial Program Design Elements ***(per DPS' Statewide Energy Efficiency Plan, 1997)***
The Low-Income Single Family Program (LISF) is one of two distinct components of the Low-Income Core Program. LISF is designed to provide comprehensive energy efficiency services to Vermonters in smaller (1 to 4 unit) low-income rental and owner-occupied housing, making more energy affordable and accelerating the acquisition of demand side management (DSM) resource from this sector. The program is designed to identify and secure comprehensive, cost-effective energy savings in low-income households. Measures will be identified using uniform, statewide technical analysis and screening for cost effectiveness. Measures will address energy use related to lighting, water heating, refrigeration, thermal envelope and replacement or upgrade of space heating and domestic hot water systems. In the fall of 2000, EVT added the fuel-switching of electric space heating and/or electric water heaters. Other program enhancements include the inclusion of hard-wired energy efficient lighting fixtures and replacement of refrigerators, where cost effective.

Financial resources to undertake efficiency improvements will combine and leverage incentives, public grants, the Vermont Weatherization Assistance Program (WAP), investment by property owners and loan programs serving low-income housing. The LISF program is designed to be operated in partnership with the Vermont WAP. A critical part of the LISF program will be aggressive partnerships with other entities, whereby the core program will work with social service agencies, energy providers, energy efficiency providers, and others to deliver program services. This may include links to the Efficient Products Core Program to enhance the availability of high efficiency refrigerators, lighting products, and other residential efficiency measures.

Key Objectives –

- For low-income, single family and small (1-4 units) apartment buildings, secure maximum cost-effective DSM resources, largely through the delivery of DSM measures as part of the services delivered by WAP.
- Develop appropriate technical analyses and protocols to assure the maximum cost-effective electric and natural gas DSM measures are installed in all WAP jobs.
- Create marketing and service-delivery strategies that minimize barriers to program participation, and maximize benefits to low-income households.
- Develop and implement an outreach and marketing plan that targets low-income housing owners/managers and tenants, recognizing the distinct types of housing and ownership unique to low-income housing, (e.g., subsidized housing projects, rental buildings, and single-family residences).
- Develop strategies, in conjunction with the Vermont Office of Economic Opportunity and the Department of Social Welfare, to strengthen linkages and coordination between WAP, LIHEAP fuel assistance, and other low-income assistance programs, recognizing that

low-income energy affordability is best attained through an appropriate balance of use reduction (through efficiency) and public financial assistance.

The eligibility criteria for the LISF program is Vermont households in single family homes or buildings of 4 units or less that have incomes lower than 150% of Federal poverty guidelines. The 150% threshold is identical to that of Vermont WAP. These eligibility levels are to be examined and possibly expanded in the future to better serve the energy needs of greater numbers of low-income Vermonters. Original estimates from the 1997 DPS' Statewide Energy Efficiency Plan report that 27,267 or 71% of all low-income households are in buildings with less than 4 units, 17,997 or 66% of these are in either single family detached homes or mobile homes.

BED Delivery Components – The current program design relies on the integration of service delivery with the local WAP agency, the Champlain Valley Weatherization Service (CVWS). For the Burlington area, the CVWS is the only delivery mechanism for the LISF program. BED refers all potential income-eligible customers to CVWS and responds to billing history requests usually within two business days.

BED tracks the Burlington low-income housing characteristics in several ways. There is an electric heat location database that was developed over the ten years that BED has offered its low-income focused Heat Exchange program. The most recent query identified 235 locations, regardless of income, that use electric baseboard heat as the primary source of heating. In addition, BED's 2000 Residential Appliance Survey estimates that there are approximately 3,920 electric water heaters in Burlington. Using the State of Vermont's Fuel Assistance database, BED cross-references with those identified as having either electric heat or water heating. Finally, BED also gets referrals from the Customer Service Representatives for those customers with high-bill concerns, chronic payment problems, or disconnects.

In September 2001, BED established an energy efficiency loan program with the Vermont Development Credit Union (VDCU). Per the 2001 Annual Report, the loan program has referred six property-owners to BED for technical assistance.

BED notes in their Annual Report that it is difficult to do a valid comparison on the implementation status of this program because CVWS is primarily responsible for gaining and processing income-eligible applicants. BED further notes that although they refer all income-eligible customers to CVWS, and respond to billing history requests, it is difficult for BED to control the actual rate of work.

BED / EVT Coordination – BED adopted EVT's fuel-switching incentive structure in the fall of 2001. BED successfully implemented EVT's kWh threshold guidelines to reduce unnecessary analyses for potential participants with low energy consumption histories.

Because the program is delivered primarily through the WAP agencies, there is little ongoing interaction between BED and EVT. Most communications are related to modifications of program procedures. EVT stays in close contact with the WAP agencies statewide to ensure that the same message is delivered.

Low Income Single Family Program- Progress Summary

Budget Category	Two Year Period (2000 - 2001)	
	Budget	Actual
Administration	-	$20,991
Implementation	-	$4,952
Incentives	-	$8,559
Total	$133,410	$34,502
Program Highlights		
23% of targeted savings from 26% of program budget.		
$548 /Annualized MWh saved (EVT's costs were $406/Annualized MWh)		

Source: BED and EVT 2001 Annual Report

Coordination with Vermont Gas Systems Programs

BED reports limited involvement with VGS on the LISF program through their establishment of an energy efficiency loan program with Vermont Development Credit Union (VDCU). In addition, BED coordinates with VGS on gas equipment in projects involving the "time of sale ordinance", because there are no incentives for measures that fall under the ordinance's requirements.

Program Performance Indicators – LISF

Performance Standard	Target Date	Status	Progress
#2 – In the year one develop a consistent Burlington protocol with CVWS that mirrors the statewide effort.	10/00	BED achieved this target, CVWS and BED had a formal arrangement established by April 2000 to cover all projects started 3/1/00 using the EEU/LISF program protocol.	●
#3 – Work in collaboration with EEU and CVWS to increase kWh savings per LISF housing unit as is described in EVT's LISF Plan to introduce new products and measures such as hardwired CFL's, torchiere lamps, and replacement refrigerators.	12/02	In 2000, EVT introduced fuel-switching and BED offered CVWS technical assistance and project management to help expedite fuel-switching projects. In 2001, four fuel-switching projects and six refrigerator replacements, along with a number of hardwired lighting fixtures were installed.	●
#4 – Fuel-switch 35 of the estimated remaining 80 totally electrically heated low-income units. (80 is the total estimated population for both LISF and REEP).	12/02	To date, there has been one LISF space heat opportunity completed. It does not appear that this goal will be reached by 12/02. Source of the 80 estimated units with electric heat should be revisited.	○
#5 – Fuel Switch 40 electric domestic hot water tanks (approximately 22% of the total estimated low-income sector).	12/02	To date, 5 of the 8 participants with electric DHW were converted to gas. The lack of fuel switching opportunities may be due to BED's aggressive removal of electric space and water heating over the past ten years.	◖

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

3. Results from Telephone Interviews

Introduction

Following a brief description of the interview process, this section includes a more detailed summary of the responses from the staff interviews. A total of ten telephone interviews were conducted with BED staff members (4), EVT staff members (4), and VGS staff members (2). A single interview guide, consisting of twenty-one questions, was used for all interviews. In the case of VGS staff, only questions relevant to their coordination with BED and/or EVT were asked. Length of interviews ranged from forty minutes to one-and-a-half hours per interviewee, depending on the scope of programs for which they are responsible. Based on the list of key components of this assessment described in the Executive Summary and the criteria defined in the Board Order, four researchable areas were identified and assessed with each interviewee as follows:

- Do the BED and EVT Core Programs have the same look and feel?
- Coordination between EVT and BED concerning implementation of the Core Programs?
- Coordination activities with Vermont Gas Systems?
- Core Program Best Practices
- Synergistic improvements in the programs on either side BED/EVT?

The interview guide is included as Appendix B.

Do the Core Programs have the same look and feel?

At the beginning of each interview, the interviewer read a description of the five major components[6] of the respective Core Program to the interviewee and prompted them for either agreement or revisions. While there were several program areas that required clarification or additional detail, the interviewees essentially defined each program the same. Appendix C includes the summary table with all of the necessary clarifications per the interviews.

From the discussions with the respective program managers, it appears that the BED Core programs that have the exact same look and feel are those that are administered statewide by a contractor or in the case of the LISF program, a network of contractors. These programs are: 1) Residential New Construction Program (now entitled Vermont ENERGY STAR® Homes, 2) Efficient Products Program, 3) and the Low Income Single Family (LISF) Program. In each of these cases, the program materials and implementation mechanisms are virtually identical for BED customers as they are for those electricity customers in rest of the State. The slight difference, especially in the case of the Vermont ENERGY STAR® Homes program, is that BED communicates with its customers through many channels and therefore can promote the efficiency programs while administering other utility services. As a City of Burlington department,

[6] Each program was defined using the following components: 1) Target Market, 2) Program Goals, 3) Products and Services, 4) Rebates/Incentives, and 5) Delivery/Approach. A table including each Core Program's information is included as Appendix C.

BED has immediate access to building permit data which greatly reduces the effort involved in tracking leads.

Concerning the MOP program, it was noted that EVT markets the program statewide. Several interviewees stated that the prescriptive incentive forms are identical, with the exception of the identification of BED on their forms for return address information. In addition, the interviewees noted that the contractors working in the BED program were also working in the EVT program.

For the CINC program, the prescriptive incentive forms were noted to be the same as the MOP program. For custom measures within the CINC program, one interviewee stated that both BED and EVT use the same screening tools of which one is a statewide tool maintained by the DPS and others are either publicly available or EVT-developed. One difference between the BED and EVT programs was noted to be that due to Burlington's Energy Code, no prescriptive incentives are available in the BED program for T-8 lighting. Also, as noted in the MOP program, the interviewees stated that the same group of contractors work in both program areas, including engineering and architectural firms and commissioning agents

For both C&I programs, the interviewees noted that BED is invited and usually attends training sessions that are facilitated by EVT. Subjects covered include computer modeling software and various vendor presentations. One interviewee noted that the C&I programs delivered by BED and EVT have fewer differences as time goes.

For the REEP program, two interviewees stated that the program materials were the exactly the same for both BED and EVT. In addition, one interviewee noted that BED has the REEP binder that EVT developed and that they communicate when necessary to resolve any programmatic questions. In addition to the staff interviews, GDS briefly spoke to two contacts within the Vermont housing community that were identified by an interviewee. Concerning program look and feel, the housing professionals both felt that the program components were essentially the same, although the manner of their delivery was slightly different. One of the housing professionals noted that BED was easier to work with due to their being a smaller organization. The same housing professional went on to note that in their experience, EVT has offered more comprehensive plan reviews but that BED was very thorough in their assistance and worked through problems, particularly lighting options.

For LISF program, the interviewees noted that the program is delivered through the WAP agencies statewide and that the program materials are the same. In addition, one interviewee stated that the WAP agencies contract out additional work relating to refrigerators and heating and EVT reimburses the WAP agencies as appropriate.

Coordination between EVT and BED concerning implementation of the Core Programs

Across all programs, the interviewees were asked if they felt that regularly scheduled meetings between BED and EVT would be useful. The majority of them responded that they "wouldn't

hurt" provided that they were not too frequent and quarterly was suggested by several respondents as reasonable.

Coordination on the MOP and CINC program implementation was noted by several interviewees to occur on a regular but informal basis and typically involving program policies such as incentive levels or new measures. In addition, the interviewees stated that they discuss program issues at occasional training sessions that EVT facilitates. One interviewee stated that there were "open lines for training opportunities" between the two organizations. Conversely, one interviewee noted that coordination on the use of spreadsheet tools could be better and that it would be very helpful for BED to have a reference list of all of the modeling tool that EVT has.

It was noted that BED initiated several training seminars, including the BED program manager delivering a brief presentation on BED's experience with commissioning on several projects. Also noted was a presentation by the University of Vermont concerning a refrigeration project that BED facilitated.

For the Vermont ENERGY STAR® Homes program, the interviewees stated that there is occasional contact between BED and EVT concerning program issues but most of the interaction is with the administrative contractor, Vermont Wise. In response to a question asking whether there were regularly scheduled meetings between BED and EVT, one interview noted, "Normally, we don't meet unless we have to – it's the beauty of email." However, the same interviewee followed that comment by saying that the most "robust" meeting that has taken place between BED and EVT involved the recent redesign of the residential new construction program. Several interviewees noted that EVT has extended an open invitation to BED to attend their monthly residential new construction meetings and that BED has attended a few meetings. The Building Solution Conference and occasional code-related trainings were noted as events that brought BED and EVT together.

For the EPP program, the interviewees noted that there is little communication between BED and EVT except for rare occasions regarding program modifications. As with residential new construction, a standing invitation has been offered to BED to attend EVT's monthly meeting but BED does not usually attend. It was also noted that an agenda of each month's meeting is circulated via email so that BED can review it and decide whether there are relevant topics to be discussed.

Concerning the REEP Program, one interviewee noted that there was frequent contact between BED and EVT when the program was initially rolled out. Several of the interviewees stated that the level coordination now is on an as-needed basis and typically involves programmatic questions and/or revisions. It was also noted that there was only occasional communication concerning specific projects. One interviewee noted that the "lines of communication are open".

For the LISF program, the interviewees noted that there is some direct contact between BED and EVT but that it is infrequent and related to procedural issues. One interviewee noted that EVT stays in close contact with the WAP agencies statewide to ensure that the program message is consistent.

Coordination activities with Vermont Gas Systems

With the exception of the EPP program, the interviewees stated that there was significant coordination with VGS on all Core programs. Particularly high levels of interaction were noted on the commercial and residential new construction programs as well as the REEP program.

For the MOP program, interviewees from BED reported having more interaction with VGS than those from EVT. The BED interviewees stated that they work with very closely with VGS on many MOP projects. An example of the interaction was given to be coordinating on incentives and sharing modeling of customer facilities.

For the CINC program, all respondents noted that they have frequent project-related communications with VGS on CINC projects. One interviewee noted that BED, EVT and VGS all worked together on a directive to alert VGS when a project is identified in their service territory. BED interviewees stated that they coordinate with VGS on every CINC project and that they often trade-off on the modeling of the projects (i.e., BED will run the simulation modeling for a given project and share the results with VGS and VGS will in turn conduct the modeling on the next project). In addition, BED noted that they share the commissioning incentive with VGS on appropriate projects. One VGS interviewee noted that there is more interaction with BED than with EVT on CINC projects and that VGS does not often share modeling data with EVT. The same interviewee stated that BED's commitment to energy efficiency, as illustrated through their leadership on LEEDs certifications and commissioning, is reassuring when partnering with them on a project. BED's high level of coordination with VGS appears to be the product of BED's relatively small staff working together with VGS over many years

For the residential new construction program, all interviewees noted a high level of coordination between VGS and both BED and EVT. They further noted that VGS utilizes the same contractors as BED and EVT, Vermont Wise and Energy Rated Home of Vermont, to administer their program. The interviewees noted that the coordination with VGS on the RNC program is more program-related than project-specific. An interviewee noted that VGS will enroll a customer when they request gas service and in turn, either BED or EVT is notified by the administrative contractor, Vermont Wise, that a new customer is enrolled. It was noted that VGS staff attend EVT's monthly meetings and regularly attend related training held by EVT.

There was noted to be little interaction with VGS on the EPP program. However, a BED interviewee noted that VGS includes EPP materials while delivering their other programs.

For the REEP program, the respondents reported that there is close coordination between the three organizations. One interviewee noted that coordination with VGS is critical because it is important that there is "one answer for low-income multi-family clients". All respondents stated that VGS coordinates with EVT and BED on both technical project aspects and incentives. Two interviewees noted that BED coordinates with VGS on REEP projects relating to the Time of Sale Ordinance.

In addition to the staff interviews, GDS briefly spoke to two contacts within the Vermont housing community that were identified by an interviewee. One housing professionals felt that it would be very helpful if the gas and electric parties to the project could consolidate so that there was only one contact person to work with. This comment was specifically stated to apply to both BED and EVT projects.

For the LISF program, the respondents noted that there was little coordination between the three organizations due to the WAP agencies responsibility for primary outreach and delivery of the field components of the program. . One interviewee stated that VGS works directly with WAP auditor when necessary.

Core Program Best Practices

Each interviewee, with the exception of the VGS staff, was asked to identify what design, marketing, delivery, and/or evaluation elements of their respective Core programs did they feel worked best.

For the Market Opportunities Program, responses included:

- Outreach to contractors concerning lighting, HVAC and motors has increased participation through greater awareness
- Inclusion of commissioning on projects is key due to the frequency of problems with controls
- EVT's prescriptive tool and Technical Reference Manual work well
- Value-added from technical advisory role and expanding on custom measures

For the Commercial and Industrial New Construction Program, responses included:

- Coordination of EVT and BED on Building Solutions Conference was excellent
- Increased push on Green Building Design has provided good case studies and has helped raise the bar for other projects
- Interaction with design teams is increasing and critical to market transformation

For the Residential New Construction Program, responses included:

- Simple program design is critical for success
- Blower door tests ensure quality

For the Efficient Products Program, responses included:

- Instant rebates are great and have led to participation that exceeded projections
- Program has come a long way with relationships with trade allies
- More products available now and prices have come down, improves program

For the Low-Income Multifamily Residential Energy Efficiency Program, responses included:

- EVT's comprehensive track is fantastic
- Technical assistance is the key component, not necessarily incentives
- Accolades from the energy efficiency industry due to owners paying 70% of measure costs

- Managing to install hard-wired T-8 lighting into individual units

For the Low-Income Single Family Program, responses included:

- Comprehensive design in the piggy-backing of services with WAP agencies

Synergistic Improvements

Each interviewee was asked to identify if and how their interaction with EVT, BED and/or VGS has helped to improve the effectiveness or customer satisfaction associated with their efforts.

For the Market Opportunities Program, responses included:

- Coordination with VGS has added to comprehensiveness and allowed for specific expertise to be focused on electrical and thermal measures
- VGS coordination allows for better incentives
- EVT's efforts in training of vendors have helped to increase participation and raise awareness
- Consistent incentives statewide are critical for the program
- EVT's prescriptive incentives simplify participation for customers

For the Commercial and Industrial New Construction Program, responses included:

- Teaming with VGS if great for customer satisfaction and allows for better incentives and a more comprehensive approach
- The current level of uniformity of programs between BED and EVT is critical for contractors that cross over service territories

For the Residential New Construction Program, responses included:

- Simplicity is key and one-stop is better, EVT delivering single program message is great
- Added value in having an organization like BED involved in the Statewide program efforts by complementing EVT's expertise

For the Efficient Products Program, responses included:

- Torchiere Trade-In event in Burlington worked well and involved great coordination
- Some coordination difficulties involved in holding the Torchiere Trade-In event in Burlington but they were satisfactorily resolved

For the Low-Income Multifamily Residential Energy Efficiency Program, responses included:

- Teaming with VGS is great to ensure comprehensiveness
- One-stop is key, customers often come through BED and are referred to VGS and vice versa
- Working together is critical, customers are truly not getting mixed messages any more
- New Design Guide has allowed a codified method for BED to offer the same services as EVT

4. Appendix A - BED Core Program Implementation Performance Indicators

Program	Performance Standard	Target Date	Status	Progress
RNC	#1 – Increase the participation of eligible market by 15% annually in Burlington. BED proposes using the 1998 Vermont Star Homes data where the target was 50 Burlington housing units.	12/02	BED is still working to establish a baseline with the DPS. For 2000, BED achieved 51% participation and in 2001 they achieved 29%. There are 62 units in the pipeline for 2002. Currently at 68% of 3-year savings goal and upon establishment of a baseline, BED appears on track to meet this standard.	◖
LISF	#2 – In the year one develop a consistent Burlington protocol with CVWS that mirrors the statewide effort.	10/00	BED achieved this target, CVWS and BED had a formal arrangement established by April 2000 to cover all projects started 3/1/00 using the EEU/LISF program protocol.	●
LISF	#3 – Work in collaboration with EEU and CVWS to increase kWh savings per LISF housing unit as is described in EVT's LISF Plan to introduce new products and measures such as hardwired CFL's, torchiere lamps, and replacement refrigerators.	12/02	In 2000, EVT introduced fuel-switching and BED offered CVWS technical assistance and project management to help expedite fuel-switching projects. In 2001, four fuel-switching projects and six refrigerator replacements, along with a number of hardwired lighting fixtures were installed.	●
LISF	#4 – Fuel-switch 35 of the estimated remaining 80 totally electrically heated low-income units. (80 is the total estimated population for both LISF and REEP).	12/02	To date, there has been one LISF space heat opportunity completed. It does not appear that this goal will be reached by 12/02. Source of the 80 estimated units with electric heat should be revisited.	○
LISF	#5 – Fuel Switch 40 electric domestic hot water tanks (approximately 22% of the total estimated low-income sector).	12/02	To date, 5 of the 8 participants with electric DHW were converted to gas. The lack of fuel switching opportunities may be due to BED's aggressive removal of electric space and water heating over the past ten years.	◖
EPP	#6 – Develop strategies and a plan in year one with City Water Department to develop a joint effort on Tumblewash program.	12/01	BED did not achieve this target. Water Department is not interested in a partnership but BED continues to provide them with energy efficiency program services and will continue discussions.	○

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Program	Performance Standard	Target Date	Status	Progress
EPP	#7 – Increase program participation by 15% each year (this includes all program measures).	12/02	Both 2000 and 2001 program participation was well above projections for both lighting and clothes washers. It is unclear whether or not a baseline was ever set to determine participation increase.	NA
All	#8 – Develop strategies and a plan in year one to use the Time of Sale Energy Ordinance as a mechanism to encourage energy savings above the ordinance requirements.	12/01	BED includes information concerning the EPP and other BED product-related incentives in each inspection report. Also, meetings with VGS have resulted in a strong coordination with them as an ally in TOS projects. Strategies appear to be in place.	●
All	#9 – Regarding the Time of Sale Ordinance program, increase participation to 5% of eligible market in program year 2 and 10% in program year 3.	1/01 and 12/02	Coordination with VGS is going very smoothly and several TOS buildings have participated in the VGS retrofit program. However, because the tenants are paying the energy costs in every case so far, the building owners are not interested. Some headway has been made on installing CFL's in common areas. It is unclear whether or not a baseline was ever set to determine % of participation.	NA
CINC	#10 – Increase participation by 15% of eligible market.	12/02	Baseline is still to be determined with DPS.	◖
REEP	#11 – Increase participation by 15% annually of eligible market w/completed projects. BED proposes that the baseline be based on 8 projects per year.	12/01	For 2001, this target was exceeded with 195 units completed. Two new housing projects completed in 2001 were developed by Housing Vermont.	●
CINC	#12 – 50% of applicable new construction projects using building commissioning services.	12/02	Development of commissioning procedures and incentives with EVT is underway. One project in 2000 included commissioning with guidance and incentives from BED. BED's goal is for 50% of all significant projects implemented during the 3 program years.	◖
CINC	#13 – Four new construction projects using "green" building design services.	12/02	Six potential "green" projects for completion by the end of 2002.	◖

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Program	Performance Standard	Target Date	Status	Progress
CINC	#14 – Continue active participation in CBES implementation and evaluate adoption of CBES as replacement for Burlington Guidelines	12/02	BED worked closely on development of CBES and secured its adoption in Burlington on 11/13/00. BED is now working with DPS and EVT on outreach and training efforts.	●
REEP	#15 – Fuel Switch 30 of the estimated remaining 80 total electrically heated low-income units. (80 is the total estimated population for LISF and REEP).	12/02	No available fuel switching opportunities in either 2000 or 2001, all projects included buildings that were heated with natural gas. It does not appear that this goal will be reached by 12/02. Source of the 80 estimated units with electric heat should be revisited.	○
REEP	#16 – Fuel-switch 45 electric domestic hot water tanks (approx. 25% of the total estimated low-income sector). This is in addition to the 40 for LISF.	12/02	No available fuel switching opportunities in either 2000 or 2001, most units were heated with natural gas or fuel switching was not technically possible. It does not appear that this goal will be reached by 12/02. The lack of fuel switching opportunities may be due to BED's aggressive removal of electric space and water heating over the past ten years.	○
All	#17 – BED will work closely with the EEU on section A-9(B) of their contract re: development of a written plan for coordination with BED. BED's first draft of a "Coordination Protocol and Scope of Services Document" was sent to EVT and the Contract Administrator on 4/7/00.	5/00	BED met this target. EVT and BED developed a coordination plan and contract was submitted to the Contract Administrator as required.	●
All	#18 – BED will follow all appropriate EEU activity milestones and make program design changes in concert with EEU to ensure consistent delivery.	Varies	To date, BED has met this target as they have stayed in contact with EVT and have incorporated all relevant program changes.	●
All	#19 – BED will work with EEU to use specialty consultants and designers as efficiently as possible to reduce costs and overlap (i.e., lighting designers and building commissioning firms).	Varies	BED and EVT have shared information and have offered mutual invitations to attend meetings with vendors, consultants, and others to eliminate unnecessary expense. Several specialty designers and consultants have been used by both BED and EVT, including Light Space Design and Cx Associates.	●

Progress Key: ●=Complete ◐=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

Program	Performance Standard	Target Date	Status	Progress
All	#20 – In conjunction with EVT develop a strategy and marketing plan to influence building design and product selection before the design phase begins.	9/00	BED and EVT are currently engaged with the DPS in an evaluation that will help determine the best marketing approach and intervention techniques. The jointly presented 2001 Building Solutions Conference helped to alert design professionals about the importance of beginning discussions early.	●

Progress Key: ●=Complete ◖=Partially Complete / In Progress ○=Incomplete/Completion Not Anticipated

5. Appendix B – Telephone Interview Guide *(attached as separate document)*

6. Appendix C – Core Program Summary Table *(attached as separate document)*

Burlington Electric Department
Core Program Implementation Evaluation
BED, EVT, and Vermont Gas Systems Staff Interviews

Purpose of Interviews and Overview

The purpose of the interviews is to gain insight into BED's coordination and administrative functions with EVT, as well as with Vermont Gas Systems. Specifically, the relatively brief, high-level interviews will be conducted with staff from BED, EVT and Vermont Gas Systems to assess:

- Do the BED and EVT programs have the same look and feel
- How EVT staff is working with BED
- Coordination activities with Vermont Gas Systems
- Program's best practices
- Synergistic improvements in the programs on either side BED/EVT

As an initial question, each interviewee will be asked in which Core Programs are they directly involved. Each subsequent question in the interview will be program-specific, so that we can more accurately assess where coordination and administrative overlap is taking place. Also, the information for each Core Program as included on the attached Summary Table will be communicated to the interviewee in order to ensure that each interviewee has the same basic understanding of each program. All corrections and additions will be noted and included on a revised Summary Table.

The following Interview Guide is a tool to guide the staff interviews and is intended to last approximately 30 to 45 minutes. The guide helps to ensure that the interviews include questions to gather information concerning the most important issues being investigated in this study. Probing questions to follow-up on areas of particular knowledge of individual staff are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals rather than others. The depth of the exploration with any particular interviewee will be guided by the role that individual played in the program's design, and operation, i.e., where they have significant experiences for meaningful responses. In order to have the guide refer similarly to issues across types of interviewee, one guide has been developed.

Burlington Electric Department
Core Program Implementation Evaluation
Interview Guide: BED, EVT, and VGS Staff

Date: _____ Interviewer initials: _____

Name of Interviewee: _____

Title: _____

Company: _____

Category of Interviewee: ☐ BED Staff ☐ EVT Staff
☐ VGS Staff ☐ Other

Telephone number: _____ Length of interview: _____

Introduction and assurance of confidentiality of individual comments. Only a summary of the responses will be included in the formal Evaluation Report to the Vermont Department of Public Service (DPS).

Do the BED and EVT Core Programs have the same look and feel?

1. Please describe for me, briefly, your responsibilities with regards to the Core Programs. In which Core Programs are you directly involved? Is there any other BED staff involved in the _____ program(s)? If yes, can you please identify them?

2. How long have you been involved with the _____ program?

3. I will briefly describe a few components of the _____ program and would like you to comment on the accuracy and inclusiveness of my descriptions. *[For each program, interviewer will communicate the information associated with the 5 categories listed on the Summary Table and prompt the interviewee for their concurrence and/or clarifications that will help to better reflect program realities.]*

4. Do you feel that the goals and objectives of the _____ program, that were just discussed, are clearly defined? Are they reasonable to carry out?

5. Do you use the same program materials as EVT for the _____ program? IF YES: What type: marketing flyers and brochures, incentive forms, data input sheets. Please describe separately for each program. IF NO: Please describe the types of program materials you use and why they are different from EVT's [BED's]. *[For EVT, ask in the form, "To your knowledge, does BED use …"]*

6. For the _____ program, do you work with the same contractors as EVT [BED]? If yes, do you work with them exclusively or do you also have contractors that only work with BED? Briefly describe the scope of the contractors' work and please describe separately for each program. *[For EVT, ask in the form, "To your knowledge, does BED work …"]*

7. For the _____ program, do you know of any significant differences in the way that it is delivered by EVT [BED]? If yes, do you see this as a problem for the program overall?

How EVT is working with BED?

8. Do you have direct contact with EVT [BED] staff concerning the implementation of the _____ program? If yes, please briefly describe the nature and frequency of your interaction.

9. Are there periodic meetings with EVT [BED] to discuss the status of the _____ program? IF YES: Are there clearly defined agendas and do you find the meetings useful? Do the meetings involve all Core Programs or just the _____ program? IF NO: Do you think there should be regular meetings? What would you like to get out of them?

10. Do you attend periodic meetings and/or trainings (e.g, NEEP, ENERGY STAR) along with the EVT [BED] program staff? If yes, can you please give some examples? Do you see attending meetings with EVT staff as a good learning opportunity or as an unnecessary or redundant burden?

11. Are there any other examples or occasions where you have worked with EVT [BED] on design, delivery, or evaluation of the _____ program? Please elaborate.

12. Have you been involved in any projects that fall under EVT's Emerging Markets program? If yes, can you briefly describe how these projects are handled? Is this working well? Why or why not?"

Coordination with Vermont Gas Systems

13. Do you have direct contact with Vermont Gas Systems [BED and/or EVT] staff concerning the implementation of the _____ program? If yes, please briefly describe the nature and frequency of your interaction. FOR VGS ONLY: Do you find that there are any significant differences in working with BED vs. EVT? If yes, can you please elaborate?

14. In delivering the _____ program's services, do you work with any of the same contractors as Vermont Gas [BED]? If yes, does this have any impact on your workload? Briefly describe the scope of the contractors' work.

15. What programs involve the most coordination between BED and VGS? Are there programs where cooperation takes place almost all the time? Are there programs where it should, in your judgment, take place more frequently?

16. *[Ask question only for CINC, MOP, and REEP]* For the _____ program, is it fair to say that BED and Vermont Gas coordinate on almost every project? IF YES: Can you briefly describe the nature and frequency of your interaction? Is the coordination formalized (e.g., required sign-off) or is it conducted on an as- needed basis? IF NO: Should there be more interaction and if so, how would you like to see it happen?

Best Practices

17. For the _____ program, please identify what design, marketing, delivery, and/or evaluation elements you are most pleased with and that you feel work best? Why?

18. For the _____ program, how are these elements the same or different from EVT's [BED's] approaches?

19. For the _____ program, please identify what design, marketing, delivery and/or evaluation elements are troublesome? Why?

Synergistic Improvements

20. For the _____ program, please identify if and how your interaction with EVT or Vermont Gas has helped to improve the effectiveness or customer satisfaction associated with your efforts. Please provide specific examples of these synergistic improvements.

21. If there have been no positive impacts, please explain why not. What do you think would help to improve this?

Thank you very much for taking the time in assisting us with this evaluation. Your contribution is a very important part of the process.

Burlington Electric Department

May 17, 2002

Core Program Summary

Commercial & Industrial Programs	Target Market	Program Goals	Products and Services	Rebates/Incentives	Delivery/Approach
Market Opportunities Program	Commercial, Industrial, Agricultural, Governmental, and Institutional Electricity Customers who are in the market for new equipment for replacement or other customer driven changes.	Minimize lost opportunities and advance market transformation for equipment and systems in C&I sectors.	Technical assistance, commissioning, and prescriptive and custom financial incentives. Targeted equipment includes lighting, HVAC, water heating, refrigeration, motors & drives, and industrial applications. Prescriptive incentives are also offered on LED traffic lights.	Prescriptive Path: approximately 50-75% of incremental costs. Custom Path: ranges but approximately 25-50% of incremental cost. Cool Choice is designed to cover 50% of incremental.	Work collaboratively with owners and trade allies, including equipment vendors, manufacturers, suppliers, ESCOs, and design professionals. Custom incentives are designed to capture cost-effective lost opportunities. Motors and HVAC equipment are also included in regional marketing/outreach programs.
New Construction Program	Commercial, Industrial, Agricultural, Governmental, and Institutional Developers, Designers, Owners, or Builders of New Construction and Substantial Renovation Projects.	To increase the awareness and benefits of energy efficiency related building codes and practices, leading to increased compliance with Act 250/Burlington Energy Code and more energy efficient construction.	Technical assistance, inspections and commissioning services, and prescriptive and custom financial incentives. Assistance with sustainable building (LEEDS). Minimum package of efficient equipment including lighting, HVAC, and motors. Assistance in meeting minimum Act 250/Burlington Energy Code guidelines.	Financial incentives through both Prescriptive and Custom Paths for Act 250 and Non-Act 250 projects. Commissioning incentives. Targeted incentives for innovative or demonstration measures, potentially including preliminary analysis & design.	Work collaboratively with City of Burlington departments to identify potential owners and developers. Act 250 projects are reviewed in conjunction with VT DPS. Coordination with Vermont Gas Systems on almost every project to ensure comprehensiveness.
Residential Programs					
Residential New Construction Program	Builders, developers and owners of new site-built and modular single and multifamily homes.	Raise both the minimum and average level of energy efficiency in residential new construction and accelerate the adoption of advanced building practices. Include electric efficiency measures.	Training, technical support, financial incentives, and home energy ratings. Addressing all major end uses: space heating, water heating, central cooling, major appliances and lighting.	Incentives to cover Home Energy Ratings (HERS), marketing assistance, financial incentives and custom incentives for multifamily homes. Incentives are further augmented by Vermont Gas Systems.	Work collaboratively with City of Burlington departments to identify potential owners and developers. BED is also part of the statewide Vermont Energy Star Homes marketing campaign, including BED bill stuffers. Leads are directed to Vermont Wise who then work with Energy Rated Homes of Vermont for HERS ratings.
Efficient Products Program	All residential and commercial electricity consumers.	Increase the sale of DOE/EPA Energy Star qualified lighting and appliance products primarily through retail stores. Also to identify market barriers to purchasing the high efficiency products and develop strategies to overcome them.	Consumer rebates for lighting and clothes washers. Marketing of high efficiency products including lighting, refrigerators, room air conditioners and water heaters through promotions, catalogs and on-line options.	CFL's - $5, Fixtures - $15, and Clothes Washers - $50. Marketing and promotional assistance to retailers.	BED contracts with EVT for management, marketing, and outreach. EVT and BED have direct contact with retailers. EVT contracts with APT to conduct ongoing retail store site visits.
Low Income Multifamily Residential Energy Efficiency Program (REEP)	Households in multi-family buildings of 5 units or more that have incomes of less than 150% of Federal poverty guidelines. For Multi-family, the income eligibility is broader than the WAP guidelines.	Provide comprehensive, cost-effective energy efficiency measures and services in multi-family low-income households.	Design assistance, financial incentives for measures including lighting, water heating, refrigeration, thermal envelope, and space heating. Incentives are used to encourage the greatest level of savings possible. Program is fuel-blind.	Custom Incentives determined on a project-by-project basis. Approximately $500 per unit in average incentives.	Work collaboratively with housing organizations and City of Burlington departments to identify owners and developers of multifamily projects. Partner with CVWS (local WAP) and Vermont Gas whenever appropriate.
Low-Income Single Family Program (LISF)	Households in single family homes or buildings of 4 units or less that have incomes of less than 150% of Federal poverty guidelines.	Provide comprehensive, cost-effective energy efficiency measures and services in low-income households.	Financial incentives for measures including lighting, water heating, refrigeration, thermal envelope, and space heating. Fuel switching of electric space heating and water heating is also included.	CFL's and DHW conservation measures are offered at no cost to the customer. Fuel switching is covered 100%, 75% by EVT (through BED) and 25% by WAP.	Work collaboratively with the local WAP agency, CVWS. WAP is the only delivery mechanism for the LISF program. Outreach is conducted using BED's existing Heat Exchange database and the State's Fuel Assistance database.